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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,545	03/01/2004	Joseph W. Hundley	P09522US02/BAS	5732
881 7590 04/29/2009 STITES & HARBISON PLLC 1199 NORTH FAIRFAX STREET SUITE 900 ALEXANDRIA, VA 22314			EXAMINER TOOMER, CEPHIA D	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 04/29/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/790,545

**Applicant(s)**

HUNDLEY, JOSEPH W.

**Examiner**

Cephia D. Toomer

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 and 32-56 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 2, 4-6, 8, 9, 11, 12, 16, 18, 28-30, 36-38, 41-45, 49-51 and 53-56 is/are allowed.  
6) ☒ Claim(s) 1, 3, 7, 10, 13-15, 17, 19-22, 24, 25, 27, 32-35, 39, 40, 46-48 and 52 is/are rejected.  
7) ☒ Claim(s) 23 and 26 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office action is in response to the amendment filed February 6, 2009.

The Obviousness-type Double Patenting rejection is withdrawn in view of Applicant filing terminal disclaimers.

The rejections under 35 USC 102 and 35 USC 103 are withdrawn in view of the amendment to the claims and applicant's arguments.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 32-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the specification for 5% ammonia.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 3, 7, 10, 32, 39 and 40 and their dependents are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 3, 7 and 10 are rejected because the total concentration of the components equals more than 100%.

Claim 32 is rejected because there is no antecedent support in claim 28 for an amide other than urea.

Claim 39 is rejected because claim 28 provides support for ammonia and not ammonia like compounds.

In view of the amendment made to claim 28, the limitations of claim 40 are not understood.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 19, 20, 21 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Irani (US 3,346,487).

Irani teaches deflocculation of solid materials in aqueous medium wherein the solid material may be coal or titanium dioxide (see col. 3, line 70 through col. 4, lines 1-15, 34-41). It should be noted that no patentable weight has been given to Applicant's intended use. Note that, if the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the

claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. See MPEP 2111 .02.

Irani does not exemplify an aqueous dispersion of titanium oxide. However, it would have been obvious to one of ordinary skill in the art to prepare such a dispersion because he clearly sets forth that the solid materials are present in an aqueous medium.

7. Claims 22, 24, 25, 27 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kindig (US 4,824,441).

Kindig teaches a method and composition for decreasing emissions of sulfur oxides and nitrogen oxides upon combustion of carbonaceous fuel material (refined coal)(see abstract). Kindig teaches that the fuel may be prepared in a powdered or bulk form and contains a catalyst such as iron oxides, vanadium oxides, tungsten oxides and mixtures thereof (see col. 14, lines 7-9; col. 13, lines 23-31; claim 8). Kindig also teaches that a promoter such as titanium dioxide may be added to the fuel composition (see claim 8).

Kindig does not specifically teach that the above components reduce NO<sub>x</sub> emissions. However, a compound and its properties are inseparable. If the above compounds reduce NO<sub>x</sub> emissions upon combustion of coal in the present invention, then it would be reasonable to expect that the above compounds would perform the same function in the invention of Kindig, absent evidence to the contrary.

8. Claims 23 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims. The prior art fails to teach or suggest the addition of a wetting agent or the claimed chemical change reagent.

9. Claims 2,4-6, 8, 9, 11, 12, 16, 18, 28-30, 36-38, 41-45, 49-51 and 53-56 are allowable. The prior art fails to teach or suggest the claimed chemical change reagent and the method of reducing NOx emissions.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Cephia D. Toomer/  
Primary Examiner  
Art Unit 1797